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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/664,699
Filing Date: September 18, 2003
Appellant(s): LEARY ET AL.

Robert J. Roby
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10-13-2008 appealing from the Office action mailed 01-17-2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

3,711,681	Leuschner et al	1-1973
GB 2,157,815 30 October 1985		
EP 350453 A1 10 January 1990		

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,2,4,6-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 350453 in view of Leuschner et al and GB 2,157,815.

Ep teaches a basin heater but does not teach the heater along the heating tube not coil around it nor does Ep teach use of a heating volume of less than 14 ounces. Note that

Art Unit: 3742

the reference , “for use with a wash basin on an aircraft”, in the apparatus claims, merely comprises intended use. The patent to Leuschner et al is applied for teaching that a flow thru heater can comprise a heating element 4 along the longitudinal extent of the fluid tube and use of the same leads to effective heating of the fluid. In view of this teaching it would have been obvious to modify the EP system to use a longitudinally extending heating element in contact with a flow through tube, to more effectively heat the fluid in the tube 3. Claims 1 and 14 set forth that the heated volume is less than 14 ounces. While one of ordinary skill in the art find such choice well within the level of skill in the art, the patent to GB 815’ has been applied for clearly teaching use of flow thru heaters to heat only a single cup at a time, whatever is loaded into the heater tube reservoir, and in view of this teaching it would have been obvious to modify EP further to limit the heating volume to 14 ounce if desired, such choice designated by undisclosed parameters such as the usage of the heated fluid and structural or size limitations of the device. Note that criticality of the volume is absent since the claimed language does not specify the flow rate or the flow of water at all. Note that the volume heated is a parameter dependent on flow rate and flow pressure, yet undisclosed parameters in the claimed invention.

(10) Response to Argument

Claim 1 defines a water heating apparatus, with the intended use of use on an aircraft. Basically, the elements claimed in claim 1 define an instantaneous heater for water with an electric heater extending along the length of the tube carrying the water,

Art Unit: 3742

with a substantial length of the tube having a volume of about 14 ounces of water. The heater of Ep 453' teaches a coiled tube heater for an instantaneous heater, but does not define the heating element as adjacent the tube for a substantial length. The patent to Leuschner is relied on for teaching a flow thru heater having multiple coils 3 that have a heater in close proximity, along a substantial length, heater 4. This is a very conventional heater orientation and one of ordinary skill in the art would have been motivated to use such a heater structure to heat the tubes in Ep 453', to attain a more efficient heating of the water flowing thru the tube. See figure 1 in Leuschner et al for instance. Claim 1 defines that the water tube defines a volume for heating less than 14 ounces of water. One of ordinary skill in the art would have found such limitation well within the level of ordinary skill in the art dependent on the intended use of the heater and the heating capacity required. Applicant's claims do not define the term "substantial length" and it is submitted that the claims are also silent as to pressure and flow rates of the tube, such parameters defining the volume of water heated. The UK patent has been applied for evidencing that a flow thru heater can heat small volumes of water. In addition, the state of the art water heaters have conventionally taught that one cup personal water and coffee heaters are notoriously old in the art.

On page 15-16 in the remarks, Applicant advances that Leuschner does not teach a plurality of coils in close proximity to each other. This argument is in error since figure 1 in Leuschner clearly teaches a heating unit having two coils in close proximity to each other. The claims are silent as to a spiral coil or a coil that circles 360 degrees. The coils depicted in figure 1 clearly meet the claim limitations presented. Note that the heater in

Art Unit: 3742

Leuschner is also coiled and follows the length of the water tube. Column 2 lines 10-11 clearly define, "a coiled water tube 3". It is clear from figure 1 that this coiled tube has a plurality of coils. Page 16 in the remarks advances that, "Only Leuschner taught an external heater and the heater of Leuschner was bent back upon itself to form a single loop". Applicants have thus recognized that the Leuschner patent clearly teaches at least one coil, (loop). Looking to figure 1, the tube in Leuschner teaches an inner and an outer coil, thus showing a plurality of coils, as set forth in the instant claims. Note that the heater follows the path of the coiled tube, and it also coiled for this reason.

Pages 16 and 17 in the remarks argue that none of the applied references teach that a substantial length of the tube along which the heater is disposed, defines a volume of approximately 14 ounces of water. It is very clear the patent to Leuschner and Gb teach tubes having small volumes, as claimed. Depending on the operator of the device, very small volumes of water can be heated, depending on the amount entered into the tube. The claims are silent as to the amount of water heated, with this amount dependent on the pressure and the flow rate. The claims are also silent as to what a "substantial length of said tube", comprises. Applicant is seeking patentable weight for a non-disclosed limitation. In addition, one of ordinary skill in the art would have found it well within the level of ordinary skill in the art to design the tube volume and heater of such length to heat the desired amount of water. If the intended volume of water to be heated is 1 cup or 3 cups, the artisan would find proper motivation in the applied references to heat the designated amount of water. In addition, the volume of

Art Unit: 3742

water heated would also depend on the flow rate of water through the tube, yet undisclosed. If the flow rate were a trickle of water, the tube could be very long and having a high volume. The claims are silent as to these parameters. The patent to GB 815 is relied on for merely evidencing that heating of small volumes of water is conventional, and is not relied on for teaching the heater/tube orientation as coiled.

As per claim 4 the tube in Leuschner and Ep are of circular cross section and the heater is between adjacent sections of the tube as claimed.

As per claim 6 the heater 4 in Leuschner is located on the exterior of the tube 3. As per claim 7 placement of the heater on different portions of the tube coil is considered an obvious and arbitrary choice in design, dependent on the level of heat needed and the aesthetics of the device required.

As per claims 8 and 9 the EP reference teaches a plurality of coils, construed as a “bundle” of coils, barring further definition of the same in the claim language.

As per claim 10 Ep teaches use of a wash basin as claimed.

As per claim 11 use of particular temperature for the water is a choice left to the artisan and the intended use of the device.

The method limitations of claims 14-18 and the apparatus limitations of claims 19-25 are unpatentable for the reasons set forth in the above discussion.

In conclusion, the EP reference teaches instantaneous heating for water with coiled tubes for the water, the Leuschner patent teaches heating small volumes of water with coiled tubes and heater that follow the curvature of the tubes, in proximity to for heating, as set forth in the instant claims, with the tubes of the water having capacity to heat small volumes of water as broadly claimed.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections are proper and should be sustained.

Respectfully submitted,

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